

P2VA1, P2VA2

Pressure transmitter



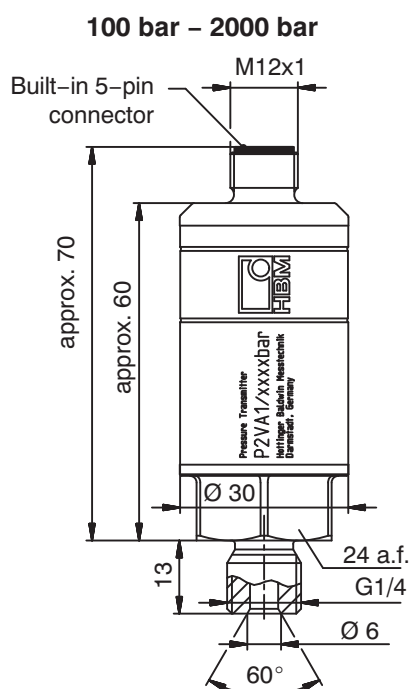
Special features

- Monolithic steel measuring body
- No welded seam
- High-quality integral amplifier
- Nominal (rated) pressures of 0 ... 100 bar to 0 ... 5000 bar
- High reliability and durability

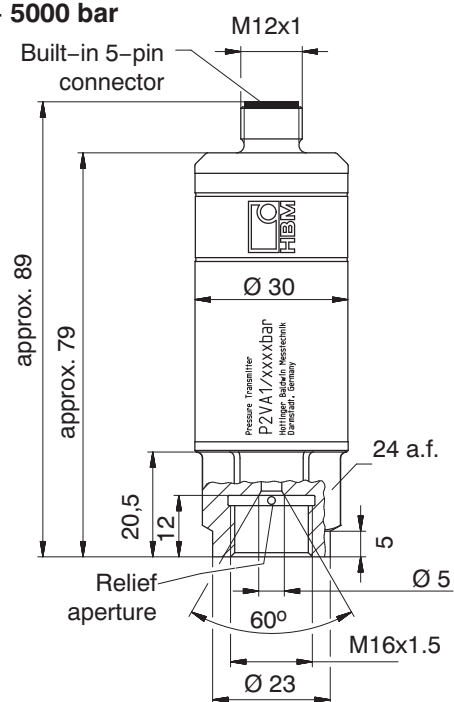
TEDS
by HBM™

TEDS: Transducer
Electronic Data Sheet

Dimensions (in mm)



3000 bar – 5000 bar



Specifications according to DIN 16086

Type		P2VA1 (output signal in V) ¹⁾ P2VA2 (output signal in mA)		
Measuring ranges	bar	100	200, 500, 1000, 2000, 3000	5000
Input quantities				
Pressure type		Absolute pressure		
Accuracy class		0.2	0.3	
Initial value	bar	0		
Operating range at reference temperature	%	0 to approx. 110 / 105		
Overload limit at reference temperature	%	150		
Test pressure	%	200	150	
During dynamic loading				
Permissible pressure	%	100		
Dead volume approx.	cm ³	0.8		
Control volume, approx.	mm ³	1.5		
Materials from which components in contact with the measurement media are made		1.4542 (measuring body) 1.4301 (seal)		
Output characteristics				
Transducer identification		TEDS		
Signal span (sensitivity)	V mA	0.5 ... 10 (9.5) 4...20 (16)		
Zero signal, adjustment tolerance (factory)	V mA	< ±0.020 < ±0.032	< ±0.010 < ±0.016	±0,020 ±0.032
Sensitivity tolerance	V mA	< ±0.020 < ±0.032	< ±0.010 < ±0.016	±0.020 ±0.032
Maximum signal	V mA	10,5 21.6		
Temperature influence on zero signal in the nominal (rated) excitation voltage range per 10 K, by reference to the nominal (rated) sensitivity	% / 10K	0.2		
Effect of temperature on sensitivity in the nominal (rated) excitation voltage range per 10 K, by reference to the actual value	% / 10K	0.2		
Characteristic curve deviation (start setting)	%	0.3		
Repeatability according to DIN 1319	%	< ±0.05		
Cut-off frequency				
-3 dB	kHz	4.5		
-1 dB	kHz	2		
Burden, min. / max.	Ω	10000 / 500		
Auxiliary energy				
Reference voltage	V	24		
Nominal (rated) range	V	15 ... 30 ²⁾		
Effect of supply voltage on changing from 15 to 30 V	%	0.02		
Max. current consumption (for the P2VA2, excluding loop current)	mA	25		
Max. power consumption	W	< 1 <2		

¹⁾ normal type: P2VA1; *italics*: P2VA2

²⁾ With P2VA2, the permissible dissipation power is exceeded at maximum operating temperature and maximum excitation voltage. Therefore, the maximum operating temperature is 70 °C instead of 85 °C with P2VA1.

Ambient conditions			
Reference temperature	°C	+23	
Nominal (rated) temperature range	°C	0 ... + 70	
Operating temperature range	°C	-20 ... + 85	
Storage temperature range	°C	-40 ... +85	
Impact resistance (tested to DIN IEC68)			
Impact acceleration	m/s ²	1000	
Impact duration	ms	4	
Impact form		Half sine wave	
Vibration resistance (tested to DIN IEC 68)	m/s ²	150	
Mechanical specifications			
Pressure connection		G1/4 externally	M16x1.5 internally
Seal		Metal, edge pressure, 58°-cone Seal attached to transducer for assembly purposes.	
Transducer mounting		The seal can be attached to the transducer.	Connect directly to a high-pressure pipe with a manipulated pipe end
Starting torque, max.	Nm	30	30-50
Electrical connection		M12 x 1 / 5-pin connector	
Mounting position		Any, but preferably pressure connection uppermost for venting purposes	
Dimensions			
Length (without pressure connection and mating connector)	mm	70 (5000 bar: approx. 80)	
Maximum diameter	mm	30	
Hexagon, across flats	mm	24	
Weight without cable, approx.	g	150	200
Degree of protection		IP67	

Sealing joint (to customer design):

3000 bar and higher:

M16x1.5 internally: High-pressure screw connector M16x1.5 – for example, from Nova Swiss. The transducer has a relief aperture, which exits in the center of a hexagonal face.

Less than 3000 bar:

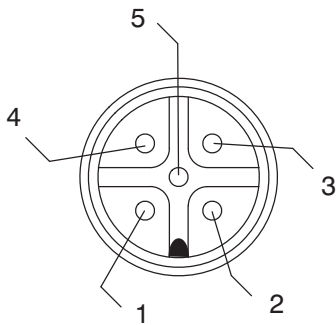
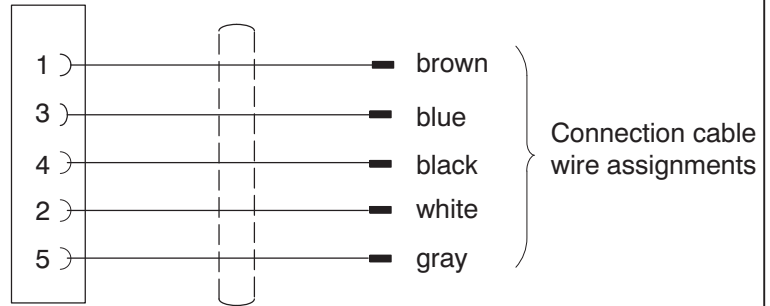
G1/4 externally (using the conical seals 58 degree with retaining spring included for these measuring ranges):
The depth to the root of the line aperture should be 17 mm, the thread must be at least 13.5 mm long. The diameter of the line aperture should be: - 4 mm. sharp-edged or with a margin, max. 0.5x45°-5 mm, sharp-edged

Possible up to 1000 bar:

Under the hexagon, sealing is provided by a Usit ring, 14.7x22x1.5. The ring must be centered and supported by screwing in to a height of 1.3 mm, diameter 22.2 ± 0.1.

Pin assignment

Supply voltage 15 to 30 V DC ¹⁾
 Supply voltage 0 V ²⁾
 Output 0.5 to 10 V (4 to 20 mA for the P2VA2)
 Output 0 V
 Transducer identification
 TEDS DATA



Connections 2 and 3 are internally linked.

- 1) Operating on a SELV circuit (separated extra-low voltage)
 2) also ground for TEDS

Accessories:

Included among the items supplied:

- 1 pack with 2 x 58-degree tapered seals with retaining spring ¹⁾ Order No.: 2-9278.0371
 1 5 m cable, female cable connector, M12x1 with shielding, Order No.: 1-KAB166-5
 5-pin polyurethane

Options to be ordered:

Connection adapter for a measuring range of less than 3000 bar

- Connection adapter G1/4 externally, M20x1.5 externally Order No.: 1-Adapt-G1/4-M20
 Connection adapter G1/4 externally, G1/2 externally Order No.: 1-Adapt-G1/4-G1/2
 1 pack with 2 x 58-degree tapered seals with retaining spring ¹⁾ Order No.: 2-9278.0371
 1 x 5 m cable, female cable connector, M12x1 with shielding, Order No.: 3-3301.0185
 5-pin polyurethane
 1 x 20 m cable, female cable connector, M12x1 with shielding, Order No.: 1-KAB166-20
 5-pin polyurethane

¹⁾ for measuring ranges of 100 bar to 2000 bar

Regional Distributor

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